Pathways for Curriculum Reform in Higher Vocational Colleges through the Coordination of Key Teaching Elements

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Abstract: *Curriculum reform in higher vocational colleges requires changes in teaching resources and working arrangements to support the capabilities that students are expected to develop. The 2026 policy on reforming key teaching elements identifies professional programmes, courses, teaching materials, teachers, and internships and practical training as connected areas of reform. This paper examines how their coordination can guide curriculum decisions. It combines policy and document analysis, mechanism comparison and reform design, with courses as the operational focus. Occupational requirements and broader educational aims inform professional capabilities, which are allocated to course objectives and translated into learning projects and assessment evidence. The proposed pathways address the translation of programme requirements into course objectives, the joint revision of content and materials, collaborative development by teachers and enterprise practitioners, progression between course learning and practical experience, and feedback from assessment into curriculum renewal. Responsibilities are assigned to the school, programme leader, course leader, teachers and enterprise mentors. Evaluation, digital resources and school-enterprise cooperation support the process across the five elements. The selection of tasks retains broader educational aims and transfer of learning. It reports no institutional intervention or measured effects. Future implementation should examine whether the arrangements produce consistent teaching and assessment, whether students can apply learning in changed conditions, and whether the required coordination can be sustained within available staff time and practical learning opportunities.*

Keywords: *higher vocational education; curriculum reform; key teaching elements; curriculum alignment; workplace learning; school-enterprise cooperation*

1. Introduction

A revised course objective has little influence on learning if the textbook, classroom tasks and final assessment continue to follow an earlier design. Similar gaps arise when a practical placement requires abilities that students have not yet encountered in their courses, or when a teacher receives updated equipment without time to develop the associated teaching. These are problems of coordination. Curriculum reform must connect decisions about what students should learn with the people, materials and practical opportunities through which they can learn it.

China's 2026 opinion on reforming key teaching elements in vocational education identifies professional programmes, courses, teaching materials, teachers, and internships and practical training as interconnected areas[1]. This orientation creates a need to examine how a change in one area affects the others. It also raises questions about responsibility. A course teacher can revise an activity but may lack authority to change the programme sequence or arrange enterprise supervision. Colleges need working arrangements that connect these levels of decision without making every classroom adjustment dependent on a large institutional project.

This paper asks how coordination of the five elements can support curriculum reform in higher vocational colleges. Policy and document analysis clarifies the reform context and the boundaries of relevant requirements. Mechanism comparison distinguishes separate improvements from coordinated decisions, and reform design specifies responsibilities, working records and review points. Four policy documents establish the institutional context, and six academic publications were selected for their relevance to curriculum alignment, competence, workplace learning, assessment and collaborative design. The analysis is not a systematic review and contains no empirical findings from the author's institution. The proposed process is intended for programme and course leaders working with teachers and enterprise

mentors. Its central concern is whether a course change can be traced from an identified educational need to a justified teaching decision and evidence of student learning. The design also addresses the resources and review arrangements needed to keep that connection working over successive course revisions.

2. Policy Context and Conceptual Foundations

2.1 The policy scope of the five teaching elements

The five elements in the 2026 opinion refer to professional programmes, courses, teaching materials, teachers, and internships and practical training[1]. Some provisions name particular participants. Course-development bodies and textbook development teams are assigned to specified municipal industry–education consortia, sectoral industry–education communities and colleges selected under the national plan for high-level vocational colleges and programmes. Other measures, including school-level plans for cultivating clusters of highly skilled talent, address vocational schools more broadly. A college can use the general direction of coordination to examine its courses, while a task attached to a pilot or designated institution cannot automatically be presented as a requirement for every college. Implementation plans should identify the source and applicability of a policy requirement before converting it into a local obligation.

The education outline published in 2025 provides a broader strategic context for improving vocational education[2]. The 2022 opinion on modern vocational education reform addresses institutional capabilities whose scope extends beyond the five teaching elements[3]. These concepts should retain their different meanings. The 2019 guidance on developing and implementing professional training plans provides a further basis for connecting needs analysis, programme planning and teaching arrangements[4]. It does not replace the professional teaching standards applicable to a particular programme. A local curriculum design must therefore bring the general policy direction together with its programme's standards and actual teaching conditions.

2.2 Courses as an operational focus for coordination

Here, a programme is a course of study in a defined vocational field, together with its training plan. Curriculum denotes the organised content, progression and learning experiences through which that plan is enacted; a course is an individual unit within it. A course change must therefore be examined for its consequences elsewhere in the curriculum. The policy places professional programmes at the foundation of reform, courses at its core and teaching materials in a connecting role[1]. The professional programme establishes the overall educational purpose and the progression of learning. A course makes a defined contribution to that purpose through its objectives and teaching sequence. Teaching materials include adopted textbooks and reviewed supplementary resources that provide content, explanations and tasks; teachers interpret and develop their use. Internships and practical training provide organised opportunities to apply and extend learning under specified conditions. Their educational function includes task selection, supervision and feedback. The existence of a training room or enterprise placement alone provides insufficient information about these functions.

Coordination can be expressed through a sequence of decisions. Occupational tasks and broader educational aims inform integrated professional capabilities. The programme allocates contributions to those capabilities across courses. Course teams then specify objectives, learning projects and the evidence needed to judge achievement. An assessment problem can trigger a revision at an earlier point, but the reason for that revision must be explicit. Evaluation, digital resources and school-enterprise cooperation support these decisions across the elements; they are not additional elements in the policy classification. These supporting arrangements should address the educational need identified in the course design.

2.3 Educational foundations and interpretive limits

Constructive alignment provides a basis for examining whether intended learning, teaching activities and assessment require compatible forms of student performance[5]. It helps a course team test the consistency of a design but does not determine which professional capabilities deserve priority. Work on competence in vocational education cautions against reducing capability to a collection of isolated actions[6]. Students also need relevant knowledge, judgement and the ability to respond when conditions change. Programme design should retain general education and professional responsibility alongside preparation for occupational tasks.

Research on workplace learning and the design of vocational curricula across school and work settings supports examining how experience is organised and interpreted[7,8]. Authentic assessment directs attention to the relationship between a task and the competence it is intended to reveal[9]. Research on collaborative curriculum design offers a basis for involving teachers in developing, trying and reviewing materials[10]. These sources address different educational settings and forms of evidence. They inform the proposed design and its evaluation questions; they do not establish the effectiveness of the 2026 policy or demonstrate outcomes in Chinese higher vocational colleges. The proposal requires testing under local programme conditions.

3. Reform Framework and Comparative Analysis

3.1 From separate improvements to connected curriculum decisions

A coordinated reform begins with a problem in student learning or programme provision that can be investigated. The programme leader identifies the capability involved and the courses that contribute to it. The course leader examines the objectives and assessment requirements, then coordinates changes in content, materials and teaching. Relevant teachers and enterprise mentors check whether the proposed tasks are educationally suitable and technically credible. The school resolves resource and timetable decisions that extend beyond a course team's authority. These responsibilities connect the policy elements through the work needed to develop and deliver a course.

Table 1 uses seven analytical dimensions to compare ways of organising that work. These dimensions describe curriculum decisions and do not add to the policy's five elements. The separate-improvement column is an analytical reference, not a finding about how frequently colleges adopt such arrangements. An updated textbook, a teacher workshop or a new practical facility may each address a legitimate need. Coordination requires the team to specify what related change is needed elsewhere. For example, a new learning project may require revised assessment criteria and teacher preparation, even when the existing classroom equipment is adequate. The resulting decisions should be proportionate to the identified need.

Table 1 Analytical dimensions of coordinated curriculum reform

Reform dimension	Separate improvements	Proposed coordination mechanism
Objectives	Courses revise aims independently	Programme capabilities guide course contributions
Content	Topics added within course boundaries	Tasks and concepts follow learning progression
Materials and resources	Resources updated separately	Materials support revised tasks and assessment
Teachers	Training detached from course changes	Development addresses agreed teaching requirements
Practical learning	Facilities or placements added	Tasks, supervision and feedback connect learning
Assessment	Existing examinations remain	Evidence corresponds to course objectives
Renewal governance	Changes recorded by individuals	Responsibilities and versions are reviewed together

3.2 A reviewable process from diagnosis to renewal

The process in Table 2 begins with diagnosis and design. Members inspect programme requirements, existing tasks and assessment evidence to identify a bounded issue. During implementation, teachers use the revised course arrangements and record problems that affect learning. Evaluation and renewal then examine the evidence and determine which parts need adjustment. The process may be organised within an existing course review cycle; it does not require a new administrative structure. A designated course leader maintains the relationship between the decisions and their supporting records.

The records should explain the decisions that another teacher needs to understand. A capability map indicates a course's contribution, a teaching package contains the materials and expected evidence, and a review note explains a revision. Existing curriculum documents can carry this information. The team also records dependencies: a practical task may require prior learning in another course, access to an enterprise mentor or a particular teaching facility. If a dependency is unavailable, the programme leader and course leader adjust the sequence or design before delivery. This prevents a nominally complete course plan from concealing unresolved conditions for implementation. Changes that affect several courses require a joint review of sequencing and assessment expectations, including sufficient time for students to consolidate foundational knowledge.

Table 2 Tasks and review evidence across the reform process

Stage	Core task	Responsible participants	Working records	Review criteria
Diagnosis and design	Define needs and course contributions	Programme and course leaders	Capability map; course proposal	Mapped objectives; feasible delivery
Implementation	Coordinate teaching and practical learning	Teachers; enterprise mentors	Teaching package; learning records	Tasks delivered; learning evidence recorded
Evaluation and renewal	Review evidence and revise design	Course team; programme leader	Review note; revised course files	Learning gaps and revisions justified

4. Challenges in Curriculum Reform

4.1 Disconnection between objectives and learning needs

A course objective can become detached from the programme when it repeats a broad capability without stating the course's contribution. Occupational requirements can also be interpreted too narrowly, with a single enterprise's current procedure treated as a general educational aim. Teachers then have little basis for selecting content or judging transfer. The programme team needs to distinguish enduring knowledge and judgement from local operating details. Student preparation also matters: an objective is difficult to implement if the prerequisite learning has not been developed. A revised aim therefore requires both an external rationale and a credible position in the programme sequence.

4.2 Slow or inconsistent updating of content and materials

Course content and teaching materials can change on different schedules. A teacher may introduce a new task while the adopted text explains an older process, leaving students to reconcile inconsistent terminology or procedures. Adding digital resources may increase this difficulty if their source, purpose and version are unclear. Course teams need a way to connect each resource to the objective and task it supports. Decisions about textbooks remain subject to the college's applicable review arrangements. Locally developed supplementary materials require an identifiable educational purpose and review; their availability does not automatically make them an approved replacement for an adopted textbook.

4.3 Teacher capabilities and reform responsibilities

A teacher may understand the occupational content yet need support in designing assessment that reveals students' reasoning. Another may have strong teaching experience but limited access to recent enterprise practice. Assigning both the same general training activity does not resolve their different needs. Reform also creates coordination work, including joint planning and review of student evidence. If this work remains unrecognised, the course leader may carry it alone. The school needs to connect teacher development and workload decisions to the actual requirements of the revised course, with responsibilities distributed according to relevant expertise and available time.

4.4 Gaps between course learning and practical experience

Students may enter practical training before acquiring the concepts needed to interpret what they observe, or repeat routine work without receiving feedback on their decisions. Returning to college does not guarantee that workplace experience will be examined in later teaching. These gaps concern the organisation of learning across settings. A placement can provide access to authentic work while offering uneven opportunities to practise the capability under assessment. Teachers and enterprise mentors need to agree what students will learn, which evidence can be collected and how unresolved learning needs will be addressed. The quality of the connection requires examination alongside the availability of facilities.

4.5 Weak evaluation and renewal arrangements

Course teams can collect satisfaction ratings, completion records and examination scores without knowing which part of the design should change. Scores are particularly difficult to compare when the assessment task or marking criteria have changed. A review therefore needs evidence tied to specific objectives and a record of the teaching conditions. Renewal also depends on responsibility: identifying a problem is insufficient if no one can authorise the required

adjustment. Course and programme leaders need agreed procedures for revising materials, dependencies and assessment, including how affected teachers and students will receive the updated information.

5. Reform Pathways

5.1 Translate professional capabilities into course objectives

The programme leader should begin with the applicable professional teaching standard, the training plan and a review of relevant occupational tasks. Enterprise practitioners help identify the decisions that competent workers make and the conditions under which they make them. Teachers examine the knowledge and judgement required, including requirements that extend across several workplaces. Students' broader development remains part of this analysis. Theoretical foundations, professional ethics, communication and the ability to continue learning should have identifiable contributions within the programme. Course teams need to show how occupational tasks draw on these foundations and create opportunities to apply them in unfamiliar circumstances. No single course needs to claim responsibility for the whole programme.

The team then maps each integrated capability to a sequence of course contributions. A foundational course may develop an explanatory concept, while a later course requires students to use it in a less familiar task. Course leaders convert those contributions into objectives that specify what students should be able to do and explain. They also identify prerequisite learning and expected evidence. This map helps distinguish purposeful reinforcement from duplication and reveals requirements that no course currently addresses. Before approving the revision, the programme leader checks the progression as a whole. The course team checks whether its objectives are achievable within the allocated teaching time and practical opportunities. Needs analysis and programme planning provide an institutional basis for these decisions[4].

A proposed quality-inspection task illustrates the mapping. The capability involves interpreting a standard, choosing an appropriate check and justifying a decision. A course objective can require students to apply those steps to an unfamiliar work sample. The learning project supplies a sample with specified defects, relevant criteria and alternative inspection methods. Assessment combines an annotated inspection record with an explanation of a borderline result. This design makes the required reasoning visible; the occupational details and expected complexity must be adapted to the programme.

5.2 Reconstruct content and teaching materials together

Course teams should select learning projects from the revised objectives and identify the concepts that students need at each stage. A project must give those concepts a purpose while allowing teachers to explain difficult ideas directly. Occupational material may need to be simplified, sequenced or supplemented for teaching. The team records what was changed and why, especially when the instructional version omits workplace complexity. Content that supports later learning remains relevant even when it does not appear in the first practical task.

Teaching materials are revised alongside this sequence. Each teaching package should contain the task, essential explanations, usable resource references and the evidence expected from students. The course leader checks consistency with the adopted textbook and arranges review of supplementary materials through the college's established procedures. Digital resources are selected for a defined function, such as allowing students to inspect a process before practical work or revisit feedback after class. They need to remain accessible under the actual teaching conditions. A shared resource record identifies the current version, its source and the course activity it supports. Teachers first test the package within a manageable teaching unit and use observed difficulties to revise it before wider use. This joint design and review also provides an opportunity for teacher learning[10].

5.3 Develop teaching collaboratively with enterprise practitioners

The course leader should allocate development tasks according to the expertise needed for the revised design. A subject teacher can explain the conceptual sequence, an enterprise practitioner can review occupational relevance, and a colleague with assessment experience can examine whether the task reveals the intended learning. Their contributions are recorded in a common course proposal. The school provides time for this work and resolves access to specialist support or facilities. Teachers retain responsibility for educational decisions and student assessment. Enterprise participation has a defined purpose and does not depend on an expectation of continuous attendance.

Joint development should include examination of the proposed task and a review after classroom use. Before an enterprise document is included, the designated contact confirms the conditions under which it may be shared. The teaching team removes restricted details and checks that any adaptation preserves technical meaning. Members then rehearse unfamiliar teaching or practical procedures and identify where students are likely to need explanation. Observation and review focus on those points. Teacher development follows the needs revealed by this process: a member may require further occupational experience, support with a technical concept or practice in questioning and assessment. Collaborative curriculum design provides a basis for connecting professional learning to this work, while its success depends on the support and participation available[10].

5.4 Build progression between courses and practical learning

Course and programme leaders should design a sequence in which practical experience extends prior learning and supplies material for subsequent study. Early activities can provide structured practice with explicit explanation and feedback. Later tasks allow students to make more decisions and account for the consequences. Internships and practical training include the tasks, supervision and opportunities for reflection through which this progression occurs. The appropriate setting depends on the learning requirement; a college facility and an enterprise workplace may provide different opportunities and constraints.

Before a practical period, teachers and enterprise mentors agree the intended learning, suitable tasks and the evidence that can be obtained. Students receive guidance on what to observe, perform and explain. During the experience, mentors provide feedback within their agreed role, and teachers address difficulties that affect learning. If workplace arrangements do not permit a required task, the programme team identifies another educational opportunity and documents the gap. Afterward, students examine a decision or problem from practice using relevant course concepts, then respond to a changed condition. This helps teachers assess whether experience has become transferable learning. Research on workplace learning and the design of vocational curricula directs attention to progression across tasks, settings and the participants responsible for them[7,8]. It does not justify assuming that the duration of a placement measures the learning achieved.

5.5 Connect learning evaluation with curriculum renewal

The course team should specify assessment evidence while designing the objectives and learning projects. An integrated task can require students to carry out a procedure, explain a decision and respond when a relevant condition changes. The criteria should separate these aspects so that a successful final product does not conceal gaps in understanding. Where students work together, individual explanation or a related task provides additional evidence of each person's learning. Teachers discuss examples of student work to check that they interpret the criteria consistently. Constructive alignment and authentic assessment offer complementary ways of examining these relationships[5,9].

Review then connects an identified difficulty to a decision about the course. A weak explanation may indicate missing conceptual teaching, an unsuitable task or an assessment prompt that does not reveal understanding. Teachers examine these alternatives before revising the design. The course leader records the evidence, proposed change and affected materials; the programme leader reviews changes that alter prerequisites or course contributions. The school addresses resource decisions beyond those roles. A new version is released with the changes communicated to participating teachers and, where relevant, students. Later teaching checks whether the revision addressed the original difficulty. Workload and access to practical opportunities remain part of that review, because a design that cannot be delivered consistently needs further adjustment.

6. Conclusions and Limitations

6.1 Implications for coordinated curriculum reform

Coordination of key teaching elements can give curriculum reform a clearer connection between educational aims and classroom decisions. The proposed process begins with occupational requirements and broader programme purposes, defines integrated capabilities and allocates course contributions. Learning projects and assessment evidence then guide decisions about content, materials, teacher preparation and practical experience. Course teams can inspect these connections and identify the responsibility attached to each decision.

Implementation requires contributions at several institutional levels. The school provides resources and authorises arrangements that cross course boundaries. Programme leaders protect learning progression, and course leaders coordinate design and revision. Teachers examine student learning through the work they teach and assess, while enterprise mentors review occupational tasks and support agreed practical learning. Evaluation, digital resources and cooperation operate across these responsibilities. A college can begin with a bounded curriculum problem and use existing planning and review processes to address it. A reform proposal is ready for teaching when its objectives, materials and assessment are coherent and its practical dependencies have been resolved sufficiently for the planned delivery.

6.2 Limitations and future evaluation

This paper offers policy interpretation and a proposed reform process. It reports no curriculum intervention, student dataset or measured effect. The approach remains general and must be adapted to the professional teaching standard, students and resources of a particular programme. Specific duties in the 2026 policy also depend on the implementing bodies identified in that document. The educational literature provides concepts and design evidence from different contexts; its findings cannot be treated as a direct evaluation of coordinated reform in Chinese higher vocational colleges. Differences in occupational practice and institutional arrangements may affect implementation.

A future pilot should first examine the consistency of the proposed course design and whether teachers can implement it within allocated time. Learning evaluation should include evidence of prior preparation, achievement of selected course objectives and application under changed conditions. Comparisons across course versions need to account for changes in tasks, criteria and student groups. Observations and interviews can help explain how coordination affected teaching decisions or where practical conditions prevented implementation. A later course or practical task can examine whether learning transfers beyond the original project. Findings about design quality, student learning and organisational feasibility should be reported separately, with claims limited to the evidence and evaluation design.

References:

[1] Ministry of Education of the People's Republic of China. (2026). Opinions on deepening reform of the key elements of teaching in vocational education [in Chinese]. https://www.moe.gov.cn/srcsite/A07/zcs_zhgg/202602/t20260212_1428773.html

[2] Central Committee of the Communist Party of China, & State Council of the People's Republic of China. (2025). Outline for building a strong education system (2024–2035) [in Chinese]. https://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/202501/t20250119_1176193.html

[3] General Office of the Communist Party of China Central Committee, & General Office of the State Council of the People's Republic of China. (2022). Opinions on deepening reform of the modern vocational education system [in Chinese]. https://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/202212/t20221222_1035691.html

[4] Ministry of Education of the People's Republic of China. (2019). Guiding opinions on the formulation and implementation of programme-level talent development plans in vocational colleges [in Chinese]. https://www.moe.gov.cn/srcsite/A07/moe_953/201906/t20190618_386287.html

[5] Biggs, J. (1996). Enhancing teaching through constructive alignment. Higher Education, 32(3), 347–364. https://doi.org/10.1007/BF00138871

[6] Mulder, M., Weigel, T., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: A critical analysis. Journal of Vocational Education & Training, 59(1), 67–88. https://doi.org/10.1080/13636820601145630

[7] Tynjälä, P. (2008). Perspectives into learning at the workplace. Educational Research Review, 3(2), 130–154. https://doi.org/10.1016/j.edurev.2007.12.001

[8] Bouw, E., Zitter, I., & de Bruijn, E. (2021). Multilevel design considerations for vocational curricula at the boundary of school and work. Journal of Curriculum Studies, 53(6), 765–783. https://doi.org/10.1080/00220272.2021.1899290

[9] Gulikers, J. T. M., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. Educational Technology Research and Development, 52(3), 67–86. https://doi.org/10.1007/BF02504676

[10] Voogt, J., Westbroek, H., Handelzalts, A., Walraven, A., McKenney, S., Pieters, J., & de Vries, B. (2011). Teacher learning in collaborative curriculum design. Teaching and Teacher Education, 27(8), 1235–1244. https://doi.org/10.1016/j.tate.2011.07.003